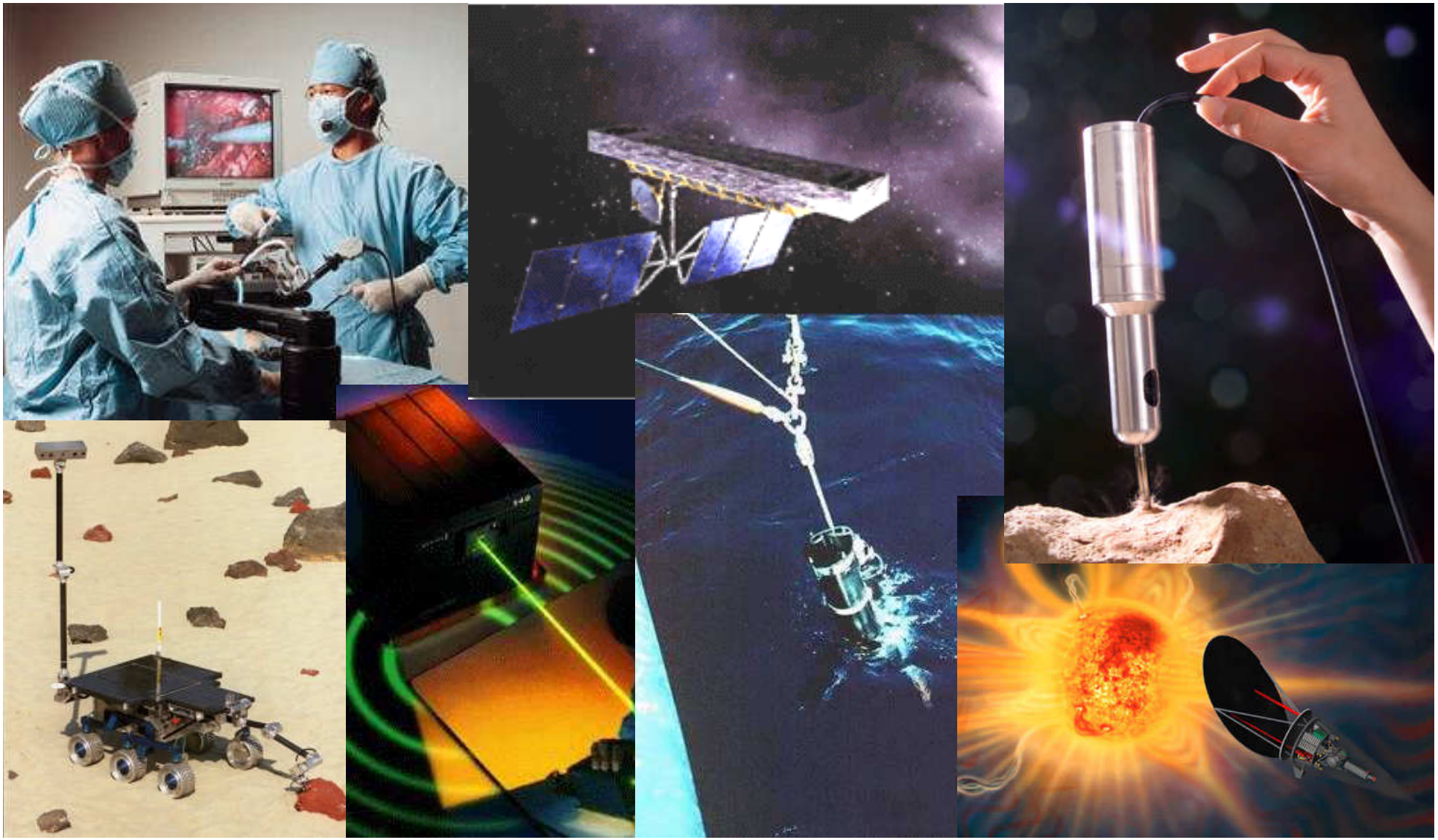
Federal SBIR/STTR Programs



SBIR/STTR Programs

Small Business Innovation Research
Small Business Technology Transfer

Wayne Schober

SBIR Program Manager
NASA Jet Propulsion Laboratory

March 6, 2007

Agenda

- Federal SBIR/STTR Program - What is it
- Information on 11 agency programs and contacts
- NASA SBIR Program Specifics
- How to Win
- Why Participate in SBIR
- Questions
- Technologies for the FY07 NASA Solicitation
- Discussions with Individual Companies

Federal SBIR Program

- 11 Federal Agencies
- $2.3 Billion Program in FY06
- Multiple Solicitation Dates

SBIR Program Funding

PL 106-554

- All Federal Agencies with an Extramural R&D Budget of over **$100M (SBIR) or $1B (STTR)** must participate in the SBIR and STTR Programs

- Participating SBIR Agencies must reserve **2.5%** of their extramural budget for SBIR and **0.3%** for STTR. Only 5 agencies, DoD, NIH, NASA, DoE, and NSF, participate in the STTR program

- **Extramural budget** is agency R&D (including FFRDCs and contractor operated facilities) less funds for government owned and operated facilities.

What is SBIR?

SBIR is a Congressionally Mandated Program for small businesses to:

- Stimulate technological innovation
- Increase private sector commercialization of federal R&D
- Increase small business participation in federally funded R&D
- SBIR is the largest source of early-stage technology financing in the U.S.

How do you Qualify for SBIR?

- Small Business of 500 or fewer employees
- Principal Investigator must spend more than 1/2 of time employed by the proposing firm
- During Phase I, a minimum of 2/3 effort must be performed by the proposing firm
- During Phase II, a minimum of 1/2 of the effort must be performed by the proposing firm
- Work must be performed in the United States

Three Phase Programs

	SBIR	STTR
Phase I Project Feasibility	6 months up to $100K	6-12 months up to $100K
Phase II Project Development To Prototype	2 yrs up to $750K	2 years up to $750K
Phase III Commercialization	non-SBIR/non-STTR funds	

* Duration and funding limits are variable by agency

What is STTR

The Small Business Technology Transfer Program is a Congressionally Mandated Program for small businesses to:

- Move ideas from research institutions to market
- Enable researchers to pursue commercial application of technologies
- Bridge the funding gap between basic research and commercial products

How do you Qualify for STTR?

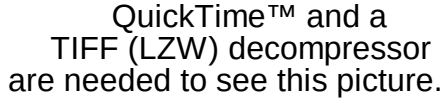
- Small business must perform a minimum of 40% of the work; research institution a minimum of 30%

- Research institution is a FFRDC, college or university, or non-profit research institution; no size limit on research institution;

- Small business must manage and control the STTR funding agreement

- Principal Investigator may be at the small business or research institution

- Small Business of 500 or fewer employees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SBIR/STTR Patent Rights

- Small businesses retain intellectual property rights

- Government receives royalty-free license for use of world wide patent rights to any invention development

- STTR must have written agreement allocating intellectual property rights among participants

- After the four year period the Government has unlimited rights in the SBIR data

SBIR Phase I Statistics

Winners are “small” businesses

- 69% of Phase I winners are companies with 20 people or less
- 41% of Phase I winners are companies with 10 people or less

Winners are relatively new to the program

- 39% of Phase I winners are first-time DoD winners
- 79% of Phase I DoD winners have 1 to 5 previous awards

Agency Programs are all . . . different



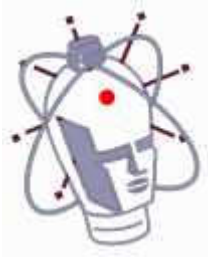














SBIR/STTR Solicitation Dates

Solicitation Dates May Change! - check the Agency specific website

2006 Solicitation	Open	Close
Homeland Security	Sep	Nov
National Science Foundation	Aug	Oct
DoD STTR	Jan 22	Mar 21
DoD 2007.2	Apr 12	Jun 13
DoD 2007.3	Jul 19	Sep 19
NASA	Jul 6	Sep 6
DOT	Feb 15	May 1
EPA	Mar 22	May 23
DOE	Sep	Nov
DoD	Nov	Dec
NIH	Jan 16	4/05; others

Others - Solicitations dates are listed on http://www.sba.gov/
and http://www.dodsbir.net/solicitation/

Contracts or Grants

Contracting Agencies		Granting Agencies	
DOD	$1,164M	HHS/NIH	
NASA	$ 105M	ED	
EPA		NSF	
DOT	6M	USDA	$19M
ED	8M	DOE	$104M
DOC			
DHS			

Internal Proposal Reviews

External Reviews

Agency Differences Exist

ALWAYS CHECK WITH THE AGENCY

Agency	**DoD**	**NASA**	**DoT**	**EPA**	**DoE**	**DHS**	**DoC**	**NSF**	**USDA**	**DoED**	**NIH**
Award Type *Contract or Grant*	C	C	C	C	G	C	C	G	G	G/C	G/C
Award Amount Phase I	70K-100K[a] Options[c]	100K	100K	70K	100K 9 mos	100K	75K	100K	80K	100K	100K[b]
Award Amount Phase II	500K-750K	600K	750K	345K	750K	750K	300K	500K[C]	350K	750K	750K[b]
Review Process	I	I	I	E	E	I	I	E	E	I	E
Research Topics	S	S	S	S	S	S	S	B	B	S	B
Gap Funding	Y	N	N	N	Y	N	N	Y	Y	N	Y
Communications	R	R	R	R	R	R	R	O	O	O	O

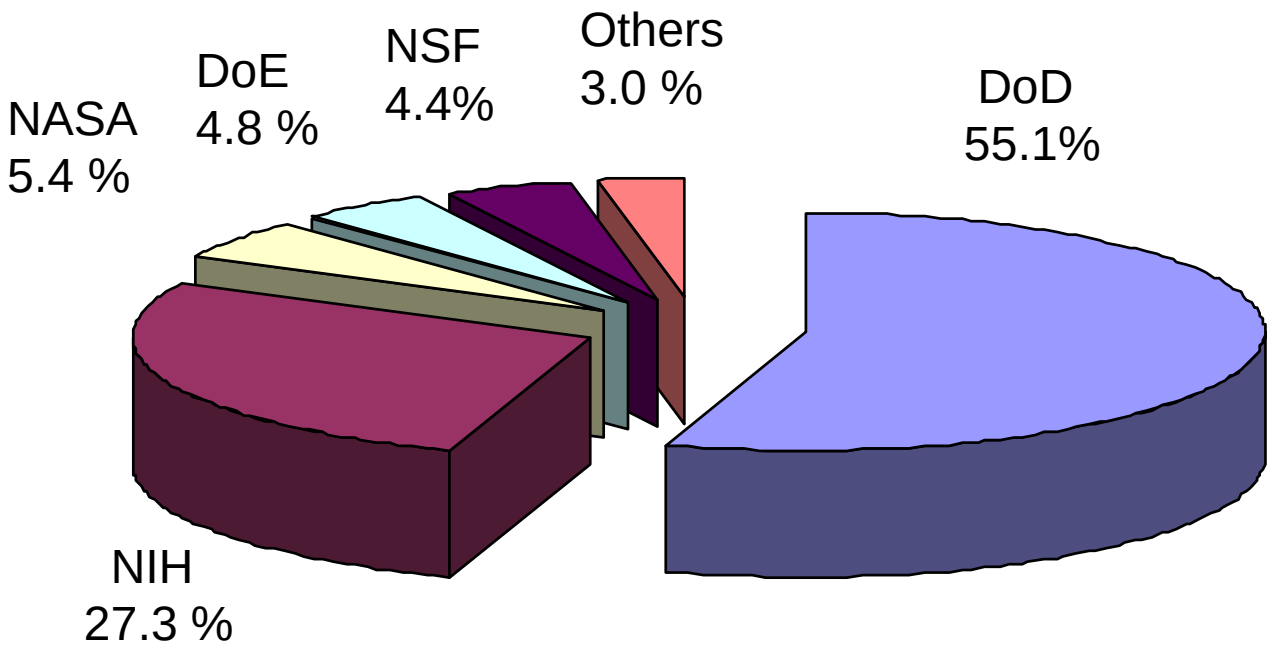
C - Contact
I – Internal Review
S – Specific
R – Restricted

G – Grant
E – External Review
B – Broad
O – Open

[a] Varies among DoD subcomponents
[b] Deviations permitted with justification
[c] Some agencies offer Phase II options

Information Updated 3/5/07

SBIR/STTR Agency Funding
FY 2006 $2.3 Billion



Ten Organizations in DoD SBIR $1,267M Budget

AIR FORCE	29.7%
ARMY	20.9%
NAVY	26.3%
Missile Defense Agency (MDA)	10.2%
DARPA	5.8%
Office of the Secretary of Defence (OSD/DDR&E)	4.4%
- - -	
Special Operations Command (SOCOM)	1.2%
Joint Service – Chemical Biological Defense	0.9%
DTRA	0.6%
NGA (was NIMA)	0.1%

SBIR Points of Contact

DoD Program Manager –
Mr. Michael Caccuitto (703) 604-0157

Air Force - Mr. Steve Guilfoos (937) 656-9021

Navy - Mr. John Williams (703) 696-0342

Army - Ms. Susan Nichols (703) 806-0859

DARPA - Ms. Connie Jacobs (703) 526-4162

Missile Defense Agency - Mike Zammit (703) 553-3408

DHS - Elisa I. Sobolewski (202) 254-6768

SBIR Points of Contact

DOT - Joseph Henebury (617) 494-2370

DOE - Julie Scott (301) 903-1414

NSF - Rosemarie Wessen (703) 292-7070

EPA - Marsha Johnson (919) 541-0952

USDA - Charles F. Cleveland (202) 401-4002

NOAA - Joseph Bishop (301) 713-4100

Education - Edward Metz (202) 208-1983

SBIR Points of Contact

OSD DDR&EM - Teresa Puretz (703) 693-0458

Defense Threat Reduction Agency
Lt. Col Kelley (703) 767-2356

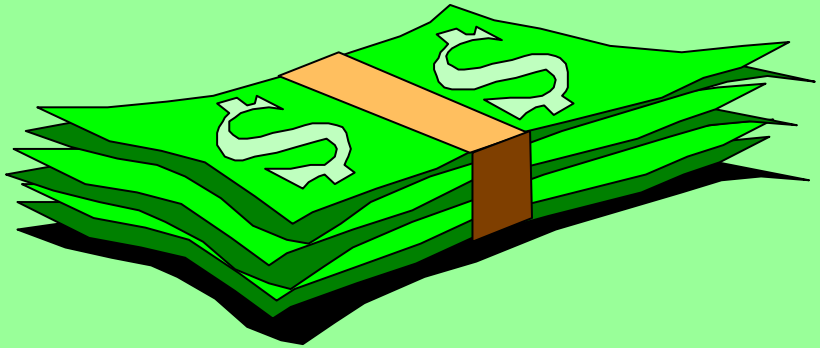
U.S Special Operations Command
Shawn Martin (813) 828-4578

Nat Geospatial Agency
Ms. Nancy Groves (703) 735-3097

NASA - Carl Ray (202) 358-4652

NASA SBIR/STTR 2007 Budget

SBIR $105M
STTR $13M



SBIR - Phase I Contracts: $100K (6 months)
STTR - Phase I Contracts: $100K (12 months)
SBIR/STTR - Phase II Contracts: $600K (2 years)

NASA Organization

Four Mission Directorates:

1. **Aeronautics Research (www.aerospace.nasa.gov)**
2. **Exploration Systems (www.exploration.nasa.gov)**
3. **Science (www.science.hq.nasa.gov)**
4. **Space Operations (www.hq.nasa.gov/osf)**

NASA Directorate Interests

- **Aeronautics Research (www.aerospace.nasa.gov)**
  - **Aviation Safety and Security**
  - **Vehicle Systems**
  - **Airspace Systems**
  - **Aeronautics Test Technology**

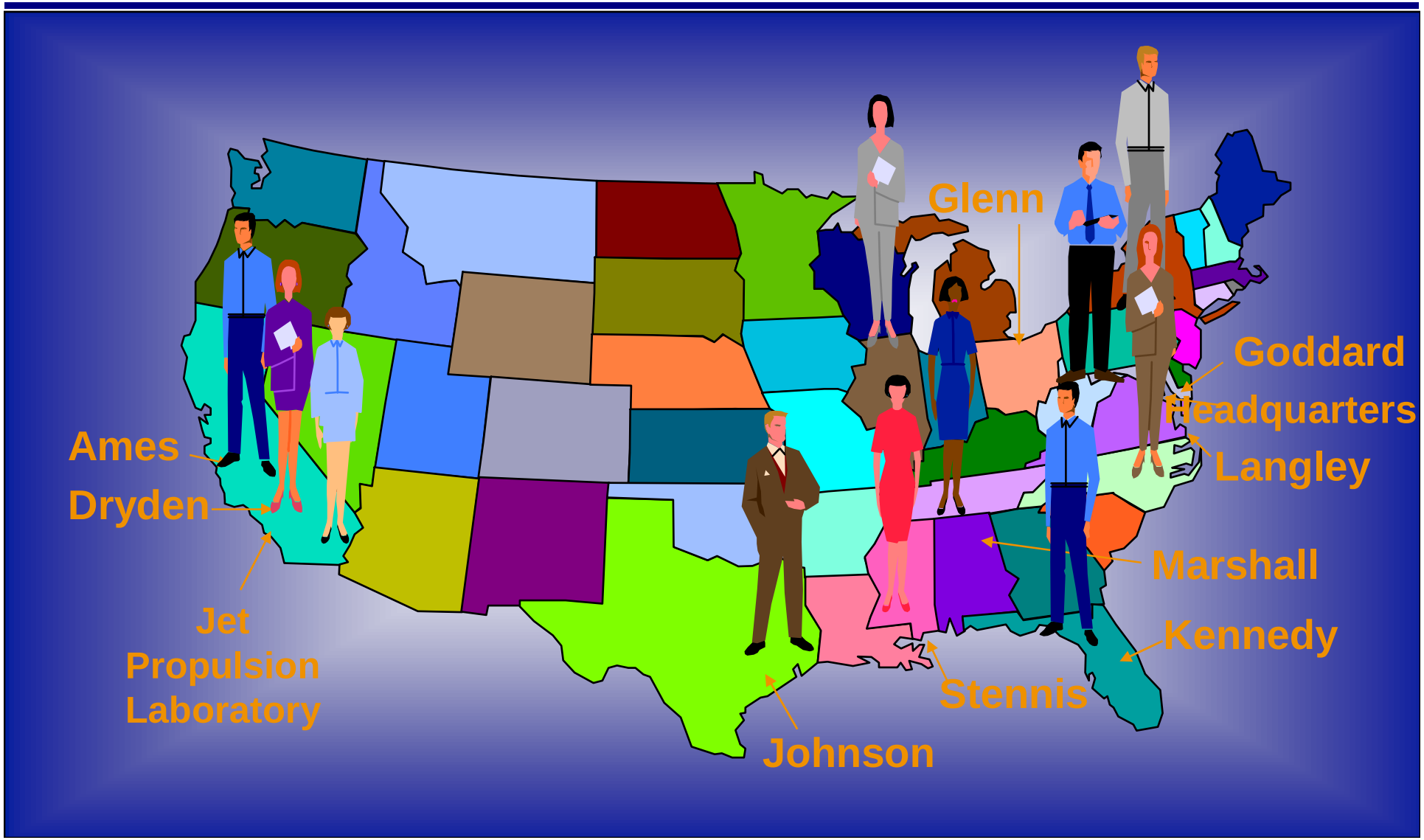
- **Exploration Systems (www.exploration.nasa.gov)**
  - **Moon Initiative Technology Support**
  - **Power**
  - **Propulsion**
  - **Biological Sciences**

NASA Directorate Interests

- **Science (www.science.hq.nasa.gov)**
  - **Earth Science**
  - **Solar System Exploration**
  - **Telescopes**
  - **Sensors and Detectors**
  - **Helioscience**
  - **Spacecraft Technologies**

- **Space Operations (www.hq.nasa.gov/osf)**
  - **Communications**
  - **Operations**

All Ten NASA Centers Participate In the SBIR Program



NASA Center Contacts

Ames Research Center - Rich Pisarski, 650-604-0149
- Information Technology (automation, planning, simulation, modeling)
- Air Traffic Management Systems, small satellite technologies
- Operations Mission Directorate related technologies

Dryden Flight Research Center - Ron Young, 661-276-3741
- Atmospheric Flight Concepts, Flight Dynamic Systems Characterization,
- Flight Sensors and Airborne Instruments for Flight Research

Kennedy Space Flight Center - Chuck Griffin, 321-867-6225
- Space Transportation, Space Operations, Launch Site Technologies

Langley Research Center - Bob Yang, 757-864-8020
- Materials, Structures, Systems Analysis
- Lidar Remote Sensing
- Exploration Systems Mission Directorate related technologies

Glenn Research Center - Gynelle Steele, 216-433-8258
- Power, Propulsion, Communications
- Aeronautics Research Mission Directorate related technologies

NASA Center Contacts

Goddard Space Flight Center - Jim Chern, 301-286-5836
- Optics, GN&C, Sensors & Detectors, Thermal Control
- Data Management and Visualization

Jet Propulsion Laboratory - Wayne Schober, 818-354-8581
- In-situ sensors and robotics, Active Microwave, Sensors & Detectors, Communications, Astronomical Observatories Technology
- Science Mission Directorate related technologies

Johnson Space Flight Center - Kumar Krishen, 281-483-1348
- Human Systems Research, Life Support and Habitation, Human Systems Integration, In-situ Resource Utilization,

Marshall Space Flight Center - Lynn Garrison, 256-544-6719
- Chemical Propulsion, Cryogenic Telescope Components, Low Thrust and Propellantless Technologies, Particles and Fields

Stennis Space Flight Center - Ray Bryant, 228-688-3964
- Geospacial Data Analysis Processing and Visualization Technologies
- Rocket Propulsion Testing Systems

SBIR is a Three Phase Program

Phase I is a 6 month, $100K effort to determine the feasibility of the proposed innovation

- **Phase I contracts are based on proposals received in response to the program's annual solicitation**

Phase II is a 2 year, $600K research, development, and demonstration effort

- **Phase II contracts are awarded to successful Phase I contractors**

Phase III is the non-SBIR funded commercialization activity based on the Phase II result

Nature of NASA SBIR Contracts

- SBIR contracts are fixed price contracts to be completed on a best effort basis
- Contractors own resulting intellectual property (data, copyrights, patents, etc.)
- Government has royalty-free rights for government use of intellectual property
- Government protects data from public dissemination for four years after contract ends

SBIR Program
Eligibility Checkpoints

- Organized for-profit U.S. small business
- At least 51% U.S. owned and independently operated
- Small business located in the U.S.
- P.I.’s primary employment with small business during the project

Submission Process

- **All proposals are submitted electronically via the internet**

- **Make sure your proposal is received on time - late proposals are rejected**

- **Proposals are screened for administrative completeness and turned over to the managing NASA Center for technical review**

Selection Process

NASA Phase I Evaluation Criteria:

1. Scientific/Technical Merit and Feasibility (50%)
2. Experience, Qualifications and Facilities (25%)
3. Effectiveness of the Proposed Work Plan (25%)
4. Commercial Potential and Feasibility (adjectival)

Selection Process

NASA Phase II Evaluation Criteria:

1. Scientific/Technical Merit and Feasibility (50%)
2. Experience, Qualifications and Facilities (25%)
3. Effectiveness of the Proposed Work Plan (25%)
4. Commercial Potential and Feasibility (critical)
   - Commercial Potential of the Technology
   - Commercial Intent of the Offeror
   - Capability of the Offeror to Realize Commercialization

Selection Process

NASA Ranking Criteria:

1. **Value to NASA**
2. **Reasonable Chance of Success**
3. **Probability that Company Can Successfully Commercialize Technology (Phase III)**

How to Win - Suggest a Topic

- SBIR/STTR Subtopics are written for small business by researchers and managers
- Topics solicit innovative ideas to solve technical challenges
- Each topic is carefully reviewed each year
- SBIR/STTR Programs seek private sector input in selecting and refining potential topic areas for future SBIR and STTR solicitations

How to Win - Read the Solicitation

- NASA Phase I Proposals are $100K for 6 months*
- Air Force Phase I proposals $100K for 9 months
- MDA, Army and OSD Phase I proposals NTE $100K for 6 months
- DARPA Phase I proposals NTE $99K for 8-12 months
- Navy Phase I proposals $70K for 7 months plus a $30K Option for 3 months

* In FY06 16 companies (6%) submitted and won NASA contracts for $70K when there was actually $100K available.

How to Win - Know Your Customer

- Review last year's solicitation and review the titles and some abstracts of the winning proposals in your area of interest
- If there is a pre-solicitation on the Web read and comment on the text (DoD release on the Web is April 12, 2007)
- Suggest topics areas and text, if appropriate
- Talk to the people in your technical area who write subtopics and review proposals at the agency where you intend to submit your proposal
  - Find their technical emphasis, needs, and interest
  - Solve a sponsors problem
  - Align your technology/proposal to the sponsor's final needs

How to Win - Follow the Directions

- Read the directions from the sponsoring agency
- Address all areas that will be scored in the evaluation by that agency
- Don’t underestimate the importance of commercialization
- Suggest topics areas and text, if appropriate to the sponsor
- Mark appropriate proposals as “Proprietary” never “confidential”. Mark only those pages that must be protected.
- Submit your proposal electronically prior to the last 24 hours

How to Win - Proposal Tips

- Start early and do your homework
- Lay out the evaluation criteria and write to satisfy them
- Don’t pad the proposal to get to the 25 page limit
- Don’t subcontract Government facilities or equipment with SBIR funds
- Comply with Conflict of Interest rules
- Prepare your proposal in accordance with the solicitation instructions or your proposal may be rejected administratively
- Submit your proposal electronically prior to the final 24 hour rush.

How to Win - Form a Team

- If appropriate, form a team with universities or other companies
- Get advice from your local small business advisory resources
- Get an independent review of your proposal prior to submission

Some Important Facts to Remember

- Eligibility is determined at time of award
- No appendices allowed in Phase I
- The PI is not required to have a Ph.D.
- The PI is required to have expertise to oversee project scientifically and technically
- Applications may be submitted to different agencies for similar work
- Awards may not be accepted from different agencies for duplicative projects

Questions

Is NASA interested in my technology ?

- Review last year's solicitation for potential areas of interest (sbir.nasa.gov)

What is NASA doing is this area of technology ?

- Call SBIR Program Office at NASA center(s) that lead the subtopic that is closest to your interests and have them put you in touch with a technical person working in the subject area
- Calls must be made before solicitation opens

Does my proposal need to fit into a specific subtopic?

- Yes, proposals that are not responsive to the solicitation may be classified "nonresponsive" and rejected. However, the subtopics are usually broadly written.

Questions

What should my proposal look like ?

A sample proposal is available at sbir.nasa.gov – Procurement info – Contract Admin & Closeout - NASA SBIR/STTR Firms Library

Should I consider using consultants and subcontractors?

Yes, but remember limitations (1/3 of research work for SBIR), and no NASA Personnel

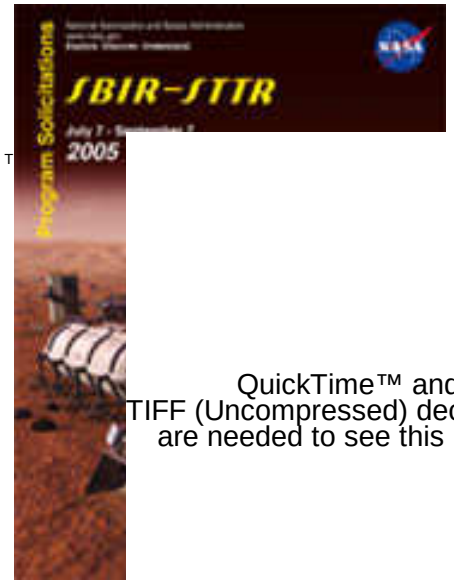
Can I submit the same proposal to different subtopics if it applies?

No, you risk having all proposals disqualified

SBIR/STTR Program Schedule

2006 Program Solicitation

Opening Date: 07/06/2007
Closing Date: 09/06/2007
Selections: Nov. 2007



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are needed to see this picture.

http://sbir.nasa.gov

Why Participate in SBIR/STTR?

1. Over $2.25 Billion available every year
2. Funds are NOT A LOAN - no repayment - up to $850K capital
3. Small businesses retain intellectual property rights
4. Provides seed money to fund high risk projects
5. Develop working relationship & credibility with government R&D
6. Fosters partnerships with large corporations and academia
7. Provides recognition and visibility for your business
8. Participation attracts venture capital and other funding sources

Trends for the NASA FY07 Solicitation

- The NASA Technology needs and solicitation will be very similar to FY06 (80% continuation)

- Consolidation - fewer topics and subtopics with more focus on what is wanted by NASA

- More emphasis on higher Technology Readiness Level proposals (more mature technology)

- Emphasis on use of technology in NASA Programs and Projects

NASA FY06 Solicitation Topics

Aeronautics

A1 Aviation Safety
A2 Fundamental Aeronautics
A3 Airspace Systems (Next Generation Air Transportation System)
A4 Aeronautics Test Technologies

Exploration

X1 Systems Analysis and Integration
X2 Avionics and Software
X3 Environmental Control and Life Support (ECLS)
X4 Lunar In Situ Resource Utilization (ISRU)
X5 Extreme Environment Mechanisms
X6 Lightweight Structures and Materials
X7 Operations of Exploration Equipment
X8 Energy Generation and Storage
X9 Propulsion and Propellant Storage
X10 Thermal Protection
X11 Thermal Management
X12 Space Human Factors and Food Systems
X13 Space Radiation
X14 Exploration Medical Capabilities

NASA FY06 Solicitation Topics

Science

S1 Robotic Exploration of the Moon and Mars
S2 Robotic Exploration Throughout the Solar System
S3 Advanced Telescope Systems
S4 Exploration of the Universe Beyond Our Solar System
S5 Instrument Technologies for Solar Science
S6 Earth Science Instrument and Sensor Technology
S7 Science Spacecraft Systems Technology
S8 Advanced Modeling, Simulation, and analysis for Science

FY07 Science Topics (FY06 Topics are being consolidated)

Robotic Exploration Technologies
Advanced Telescope Systems
Sensors, Detectors and Instruments
Spacecraft and Platform Systems
Information Technology

Operations

O1 Space Communications
O2 Space Transportation

NASA FY06 Solicitation
Aeronautics Research

Topic A1 Aviation Safety

A1.01 Vehicle-Centric 4D Trajectory and Mission Management
A1.02 Integrated Resilient Aircraft Control
A1.03 Aircraft Aging and Durability
A1.04 Aircraft Icing Avoidance and Tolerance
A1.05 Crew Systems Technologies for Improved Aviation Safety
A1.06 Aviation External Hazard Sensor Technologies
A1.07 Integrated Vehicle Health Management

Topic A2 Fundamental Aeronautics

A2.01 Materials and Structures for Future Aircraft
A2.02 Combustion for Aerospace Vehicles
A2.03 Aero-Acoustics
A2.04 Aeroelasticity
A2.05 Aerodynamics
A2.06 Aerothermodynamics
A2.07 Aircraft Control and Dynamics
A2.08 Experimental Capabilities and Flight Research
A2.09 Aircraft Systems Analysis, Design and Optimization
A2.10 Rotorcraft

NASA FY06 Solicitation
Aeronautics Research

Topic A3 Airspace Systems

A3.01 Next Generation Air Transportation System - Airspace
A3.02 Next Generation Air Transportation - Airportal

Topic A4 Aeronautics Test Technologies

A4.01 Test Measurement Technology
A4.02 Test Techniques and Facility Development

The Aeronautics Solicitation in FY07 will be very similar to FY06.

NASA FY06 Solicitation
Exploration Systems

Topic X1 Systems Analysis and Integration

X1.01 Full Data Coherency Systems for Engineering Systems Modeling and Simulation

X1.02 System Lifecycle Integration of Cost and Risk Models

Topic X2 Avionics and Software

X2.01 Integrated Systems Health Management

X2.02 Spacecraft Autonomy

X2.03 Software Engineering Technologies for Human-Rated Spacecraft

X2.04 Low Temperature, Radiation Hardened Avionics

Topic X3 Environmental Cvontrol and Life Support (ECLS)

X3.01 Spacecraft Cabin Atmospheric Management and Habitation Systems

X3.02 Water Processing and Waste Management

X3.03 Crewed Spacecraft Environmental Monitoring and Control and Fire Protection Systems

Topic X4 Lunar In Situ Resource Utilization (ISRU)

X4.01 Lunar Regolith Excavation and Material Handling

X4.02 Oxygen Production from Lunar Regolith

X4.03 Lunar Polar Resource Prospecting and Collection

NASA FY06 Solicitation
Exploration Systems

Topic X5 Extreme Environment Mechanisms

X5.01 Motors and Drive Systems for Cryogenic Environments

Topic X6 Lightweight Structures and Materials

X6.01 Radiation Shielding Materials and Structures

X6.02 Lightweight Pressurized Structures Including Inflatables

X6.03 Material Concepts for Lightweight Structure Technology Development

Topic X7 Operations of Exploration Equipment

X7.01 Supportability Technologies for Long-Duration Space MissionsX7.02 Human-System Interaction

X7.03 Surface Handling and Mobility, Transportation, and Operations Equipment (Lunar or Mars)

Topic X8 Energy Generation and Storage

X8.01 Non-Toxic Launch Vehicle Power for Thrust Vector and Engine ActuationX8.02 Space Based Nuclear Fission Power Technologies

X8.03 Space Rated Batteries and Fuel Cells for Surface Systems

NASA FY06 Solicitation
Exploration Systems

Topic X9 Propulsion and Propellant Storage

X9.01 Long Term Cryogenic Propellant Storage, Management, and Acquisition

X9.02 Innovative Booster Engine Manufacturing, Components, and Health Management

X9.03 Cryogenic and Non-Toxic Storable Propellant Space Engines

X9.04 Nuclear Thermal Propulsion

Topic X10 Thermal Protection

X10.01 Ablative Thermal Protection System for CEV

Topic X11 Thermal Management

X11.01 Thermal Control for Lunar Surface Systems

Topic X12 Space Human Factors and Food Systems

X12.01 Food Access Beyond Low Earth Orbit

X12.02 Long-Duration Space Human Factors

Topic X13 Space Radiation

X13.01 Space Radiation Health Research Technology

Topic X14 Exploration Medical Capabilities

X14.01 Health Preservation in the Space Environment

X14.02 Lunar In Situ Autonomous Health Monitoring

The FY07 Exploration Systems Program will be similar but incorporate some changes

NASA FY06 Solicitation
Science

Topic S1 Robotic Exploration of the Moon and Mars

S1.01 Surface Robotic Exploration
S1.02 Subsurface Robotic Exploration
S1.03 Martian Entry, Descent and Landing Sensors

Topic S2 Robotic Exploration Throughout the Solar System

S2.01 Astrobiology and Atmospheric Instruments for Planetary Exploration
S2.02 In Situ Planetary Atmospheric Measurement Technologies
S2.03 Energy Conversion and Power Electronics for Deep Space Missions
S2.04 Flexible Antennas and Electronics for L-Band Remote Sensing
S2.05 Planetary Balloons and Aerobots

Topic S3 Advanced Telescope Systems

S3.01 Precision Spacecraft Formations for Advanced Telescope Systems
S3.02 Proximity Glare Suppression for Characterization of Faint Astrophysical Objects
S3.03 Precision Deployable Structures and Metrology for Advanced Telescope Systems
S3.04 Optical Devices for Starlight Detection and Wavefront Analysis

NASA FY06 Solicitation
Science

Topic S4 Exploration of the Universe Beyond Our Solar System

S4.01 Sensor and Detector Technology for Visible, IR, Far IR and Submillimeter

S4.02 Detector Technologies for UV, X-Ray, Gamma-Ray and Cosmic-Ray Instruments

S4.03 Cryogenic Systems for Sensors and Detectors

S4.04 Optics Manufacturing and Metrology for Telescopes

S4.05 Data Analysis Technologies for Potential Gravity Wave Signals

S4.06 Terrestrial Balloon Technology

Topic S5 Instrument Technologies for Solar Science

S5.01 Voltage Supplies and Charge Amplifiers for Solar Science Missions

S5.02 Sensors for Measurement of Particles and Fields

Topic S6 Earth Science Instrument and Sensor Technology

S6.01 Passive Optics and Stepping Motors for Spaceborne and Airborne Platforms

S6.02 Lidar System Components for Spaceborne and Airborne Platforms

S6.03 Earth In Situ Sensors

S6.04 Passive Microwave

S6.05 Active Microwave

NASA FY06 Solicitation
Science

Topic S7 Science Spacecraft Systems Technology

S7.01 Guidance, Navigation and Control Beyond Low Earth Orbit (LEO)
S7.02 Long Duration Command and Data Handling for Harsh Environments
S7.03 Electric Propulsion
S7.04 Chemical and Propellantless Propulsion for Deep Space
S7.05 Power Electronic Devices, Components and Packaging
S7.06 Thermal Control Technologies for Science Spacecraft

Topic S8 Advanced Modeling, Simulation, and Analysis for Science

S8.01 Automation and Planning for Complex Tasks
S8.02 Distributed Information Systems and Numerical Simulation
S8.03 On-Board Science for Decisions and Actions
S8.04 Spatial and Visual Methods for Search, Analysis and Display of Science Data
S8.05 Science Data Management and Visualization

FY07 will be 80% similar to FY06 but some subtopics will be consolidated.

NASA FY06 Solicitation
Space Operations

Topic O1 Space Communications

O1.01 Coding, Modulation, and Compression
O1.02 Precision Spacecraft Navigation and Tracking
O1.03 Communication for Space-Based Range
O1.04 Antenna Technology for Spacecraft and Planetary Surface Vehicles
O1.05 Reconfigurable/Reprogrammable Communication Systems
O1.06 Extravehicular (EVA) Radios
O1.07 Transformational Communications Technology
O1.08 Long Range Optical Telecommunications
O1.09 Long Range Space RF Telecommunications
O1.10 Surface Networks and Orbit Access Links
O1.11 Software for Space Communications Infrastructure Operations

Topic O2 Space Transportation

O2.01 Automated Optical Tracking and Identification of Tumbling 3D Objects
O2.02 Space Transportation Propulsion System and Test Facility Requirements and Instrumentation
O2.03 Automated Collection and Transfer of Launch Range Surveillance/Intrusion Data
FY07 ADD Processing and Operations - Crew Health and Safety

(FY07 will be very similar to FY06)

For Further Information

- Read the web sites - they are good

- Search on sbir and an agency name e.g.
sbir nasa,
sbir air force,
sbir sba

- Call one of the agency contact names; call me

- Use the keyword search to find related topics at: http://www.dodsbir.net/topics/default.asp for the DoD solicitation